

## REMARKS

Claims 1-16 are pending in the present application. Reconsideration is respectfully requested in view of the following remarks.

1. **Rejection of claims 1-16 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,284,037 to Sapper, hereafter "Sapper", in view of CA 2,154,818 to Bergfried et al., hereafter "Bergfried".**

The Office Action states that Sapper discloses an additive for a coating formulation with binder used in basecoat materials comprising a nonassociative rheology stabilizer such as the exemplified Viscalex HV30 nonassociative thickener, aluminum pigment, water, and polypropylene glycol as a nonionic surfactant, mixed with a polyurethane binder (col. 4, lines 25-65). The Office Action further states that Sapper teaches the use of a tertiary amine such as dimethylethanolamine to control pH. The Office Action states that the amounts of aluminum, nonassociative thickener, and nonionic in the exemplified coating composition overlap with the claimed amount in the coating composition of claim 13. 12/24/2008 Office Action page 3, para. 3.

The Office Action concedes that Sapper does not disclose preparing a pigment paste without binder comprising metallic pigment, nonassociative rheology stabilizer, nonionic surfactant, and amine compound. 12/24/2008 Office Action page 4, para. 1.

The Office Action states, however, that the secondary reference, to Bergfried, discloses a pigment concentrate comprising a pigment, a polyacrylate-based thickener, a nonionic surfactant, an amine, and water, wherein the pigment past is added to a binder resin. 12/24/2008 Office Action page 4, para. 2.

The Office Action alleges that, given the teachings of Sapper and Bergfried, "it would have been obvious to one of ordinary skill in the part to prepare the presently claimed pigment paste before adding to a binder to prepare a coating composition." 12/24/2008 Office Action page 4, para. 3

Applicants appreciate the detailed basis for rejection but must respectfully disagree. Applicants respectfully submit that the present claims are patentable over the combination of Sapper and Bergfried, for the following reasons.

Sapper is not directed to a paste, certainly not a paste of a metal pigment, but rather the addition of a polymer dispersant additive to a coating material that, in the examples, contains 0.2 percent aluminum pigment. Thus, Sapper does not remotely teach or suggest a metal pigment paste that solves the problem of long term stability.

To prevent further confusion, it should be noted that the Examiner has appeared to change positions with respect to Sapper. In the Advisory Action, it was stated:

The Examiner respectfully submits that Sapper discloses a composition comprising pigment, thickener, nonionic surfactant, amine, and water. The composition is a pigment paste.

Applicants again note that the whole purpose of Sapper is to avoid the formation of an unstable paint. In column 4, Sapper provides two examples of metallic paints containing 0.2 percent aluminum pigment or 4 percent blue and mica pigment, which has an initial viscosity of 81 mPa · sec. Comparing such a viscosity to known materials, it can be easily determined that this is not a paste. For example, the viscosities of castrol oil, honey, an ketchup are, respectively, 1000, 10000, and 50000 mPa · sec. Thus, while more viscous than water, the composition of Sapper does not resemble a paste such as is claimed by Applicants. Furthermore, “paints” and “coating materials” in general are not referred to as pastes for good reason, that being that they are not pastes by common usage of the word. It is again noted that Applicants are not using the presently claimed paste as paint or coating material but as a storage stable intermediate for use in making a coating material.

The present Office Action, however, appears to now agree that Sapper teaches a composition that is not a metallic paste. Beyond that, however, it is important to understand that there is no evidence that Sapper used a pigment paste to make his coating composition. There is no mention of a pigment paste anywhere in Sapper. What Sapper does teach is an additive for a coating formulation. Abstract. The additive comprises a

small amount of (i) a specified acrylate polymer and (ii) a nonassociative stabilizer. The nonassociative stabilizer can be Viscalex HV 30, as noted by the Examiner. However, neither the additive nor the coating formulation is a metallic paste.

The purpose of Sapper's additive is to improve the stability of a coating formulation. Col. 1, lines 30-34. In particular, Sapper states:

The polymer dispersions used in accordance with the invention are outstandingly suitable as viscosity adjusters and as a stabilizer for coating formulations, especially for aqueous coating formulations, in order to improve the rheological stability of these coating formulations....The polymer dispersion used in accordance with the invention has been found particularly suitable as an addition to coating materials, such as metallic paints, for automotive finishing. [Emphasis added.]

Col. 1, line 53, to col. 2, line 6.

Thus, the nonassociative thickener of Sapper is not used as a thickener for a metallic paste, but for a paint. As explained in the last response, a paste is not a paint. One cannot and would not coat a substrate with a metallic paste. As stated in Applicants' amendment of June 17, 2008, on page 10, first full paragraph, one does not coat using a paste, nor with a coating containing 22% of aluminum pigment as in the Example on page 19, line 22, to page 20, line 6, but rather the paste is greatly diluted in the final coating composition, as indicated in present claim 13 or the example on page 20 of the present application, in which 3% of the metal pigment is contained in the coating material.

Sapper further states, "The polymer dispersions can be added to any desired known aqueous coating formulations, such as aqueous formulations based on polyurethane, on polyester, on acrylate or on epoxy, and to aqueous 2-component coating systems based on isocyanate." So Sapper actually teaches that the nonassociative stabilizer is not part of a metallic paste and is added to a formulation comprising a binder, which is clearly inconsistent with the present claims.

The fact that Sapper teaches nothing about a metallic paste is further illustrated by the Examples in Sapper. Sapper, in fact, adds the Viscalex HV30 to a stored paint, not to a metallic paste. Col. 4, line 61. Furthermore, claim 1 of Sapper claims a method of

stabilizing an aqueous coating formulation which in claim 2 is described as selected from the group consisting of one-component waterborne coating formulations, two-component waterborne coating formulations, and physically drying waterborne coating formulations.

Thus, Applicants respectfully submit that the reference, i.e., Sapper, as a whole, does not teach or suggest what the Examiner is concluding, i.e., Applicants' pigment paste. Sapper teaches an example that is referred to by the Examiner (i.e., paint number 1) that includes an aluminum pigment among a myriad of components, four of which are binders. Sapper does not teach, suggest, motivate, or even allude to an aqueous metallic paste, let alone one that is free from binders and grinding resins such as the one in Applicants' independent claim 1. As a whole, or in part, Sapper does not provide any basis for arriving at Applicants' independent claim 1. Rather, Sapper specifically teaches away from adding a nonassociative thickener to any composition, let alone a metallic paste, that does not have a binder and that is not a paint, in contrast to the present invention, which is directed to a metallic paste that cannot be used as a coating, but only as a component for preparing a coating, in which a specific nonassociative thickener is used without a binder.

In this regard, it is held that "[a] *prima facie* case of obviousness may also be rebutted by showing that the art, in any material respect, teaches away from the claimed invention." *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). For at least this reason, Applicants further respectfully assert that Sapper cannot be used as a prior art reference because it teaches away from the present independent claim 1. These deficiencies are not, and cannot be, remedied by Bergfried.

Thus, turning now to Bergfried, the Office Action seems to imply that Bergfried teaches a metallic paste. The Examiner equates Bergfried's electrically conductive pigment based on metal oxides to Applicants' metallic pigment. Applicants respectfully submit, however, that this alleged equivalency is improper because it is generally known in the art that when it comes to aqueous solution behavior and stability, an electrically conductive pigment based on metal oxides is substantially different from an aluminum pigment. The courts have held that "[i]n order to rely on equivalence as a rationale

supporting an obviousness rejection, the equivalency must be recognized in the prior art....” *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958).

Thus, Bergfried is indeed directed to a paste, but not a metallic paste. In contrast, the present invention on page specifically states:

By metal pigments are meant finely divided metallic pigments, usually in the form of flakes. A distinction is made between metallic pigments and those metal effect pigments which fulfill functional roles, e.g. in corrosion protection, as conductive pigments....

Page 8, lines 28, to page 9, line 5.

Further, on page 9 of the specification, there is a Table further illustrating the distinction between, on the one hand, metallic pigments, which include aluminum pigments and gold bronzes and, on the other hand, functional pigments such as conductive pigments.

In contrast, Bergfried relates to “an aqueous concentrate of an electrically conductive, ultrafine pigment” that can be used in an antistatic coating. Page 1, lines 1-2. Bergfried teaches “electrically conductive pigment, tin (IV) oxide, doped with antimony and/or fluoride, which optionally is coated onto a supporting pigment (rutile, barium sulfate, mica, etc.).” Page 3, lines 28-31.

In response to Applicants’ arguments, the Examiner previously asserted that since both Sapper’s pigments and Bergfried’s pigments are conductive and they are thus equivalent. (4/28/2008 Office Action, page 5, second paragraph). However, since Bergfried is concerned with metal oxides, which behave substantially differently from metals, this assertion is without basis. Applicants respectfully submit that it is well known that many aspects of a compound and/or particle are critical in the ability for a compound and/or particle to disperse in a medium, such as polarity, particle size, surface charge, geometry, swellability, etc. The Examiner has not provided any basis as to why two chemically distinct species would be equivalent in dispersion behavior based on their conductivity. The Examiner has not given any technical or factual basis to support this assertion. It is respectfully requested that the Examiner submits evidence to support this assertion if the rejection is to be maintained. For example, there is no reason that one of

ordinary skill would consider the terpolymer of Bergfried to be a dispersant for aluminum flakes, merely because it is a dispersant for a tin oxide material.

Furthermore, Bergfried fails to teach the present metallic paste for another reason. The Office Action states:

With respect to the amount of aluminum pigment, while Sapper discloses an amount of aluminum pigment in a coating composition less than presently claimed and Bergfried discloses an amount of pigment more than presently claimed, it is considered that the amount of pigment is determined by the desired metallic effect... [Emphasis added.]

12/24/2008 Office Action page 4, para. 4.

Applicants respectfully maintain that the amount of from 15 to 40% by weight of at least one metal pigment, as recited in independent claim 1, is indeed unobvious. There is no teaching or suggestion in the cited prior art to use 15 to 40% by weight of at least one metal pigment, preferably 22%. In contrast, Bergfried requires 40-60% of an “electrically conductive pigment based on metal oxides.”

Applicants respectfully submit that to find obviousness, the Examiner must “identify a reason that would have prompted a person of ordinary skill in the art in the relevant field to combine the elements in the way the claimed new invention does.” *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). Applicants respectfully submit that no such reason has been identified by the Examiner as to why one with ordinary skill in the art would change Bergfried's 40 to 60% to Applicants' 15 to 40% by weight. The only reason given by the Examiner is that the maximum amount is not relevant because it is less than the amount taught by Bergfried.

However, this reason is merely a conclusory statement and is not supported by any evidence or case law. The Applicants are not arguing merely that the amount of metal pigment in the paste is novel and unexpected, but rather that the stability obtained for the novel composition is surprising, which is further evident by comparing the demonstrated stabilities of only 10 hours achieved by Bergfried for a paste comprising tin oxide.

Bergfried does not teach the present invention for still another reason. In particular, Bergfried fails to teach the requirement of the present invention (as recited in claim 1) that "the aqueous pigment paste is free from binders, including grinding resins used for dispersing pigments." The present specification states:

The pigment paste of the invention...was substantially free form organic solvents, binders, and grinding resins. Additionally, only comparatively small amounts of additives were needed. Despite this, the pigment paste of the invention was surprisingly stable, transportable, and storable....

Page 6, lines 1-7.

Applicants submit that Bergfried does indeed use a binder. As indicated in claim 1, the composition of Bergfried includes, not only a polyacrylate thickener in the amount of 0 to 2.0%, but also 2 to 4.9 percent of a terpolymeric, anionic polyacrylate, which satisfies the definition of a binder. (It is noted that the present invention requires the thickener to be used in an amount less than 1 percent.)

Furthermore, Bergfried states, on page 2, as follow:

Typical dispersing additives for aqueous systems are surface active, anionic, cationic or nonionic substances, which have a low molecular weight...The use of polyacrylates of low molecular weight as dispersants for pigments in aqueous coating is also known....However, adequate stabilization of the aqueous pigment concentrates cannot be achieved according to this state of the art.

Thus, Bergfried teaches away from the present invention, to the extent it might be relevant to metal pigments, by specifically stating, not only that a polyacrylate dispersant is not sufficient, but that a certain terpolymer binder is required. Accordingly, Bergfried requires a terpolymer which is used as a binder in addition to (and in substantially different amounts from) a nonassociative thickener, in contradistinction to the present composition. In fact, based on the experimental results shown in the table on page 8 of Bergfried, a certain type of terpolymer binder (binder 1 or 3) is required, compared to the binder of formulations 1, 3, and 6. Finally, unless this binder is used, the compositions are not stable after only 1 hour, whereas with the binder required by Bergfried, and excluded by the present invention, the stability is shown to be achieved for merely 10 hours, as compared to 3 months achieved using the present invention, as stated on page 2 of the present specification and required by present claim 1.

It is respectfully submitted that the Office Action is incorrect in asserting that the terpolymer of Bergfried is not a binder. In this regard, since the present invention is in the field of automotive paints, reference can be made to Wikipedia on the subject of paint, submitted herewith as evidence, to provide a meaning for the term "binder."

Wikipedia states:

The binder, commonly referred to as the vehicle, is the actual film forming component of paint...Binders include synthetic or natural resins such as acrylics, polyurethanes, polyesters, melamine resins, epoxy, or oils.

Wikipedia further states that, in addition to pigment, binder, and solvent, "paint can have a wide variety of miscellaneous additives, which are usually used in very small amounts and yet give a very significant effect on the product." Page 4, second paragraph of enclosure.

Bergfried's terpolymer is not an additive. In Examples 2, 4, and 5 of Bergfried, the terpolymer is used in an amount of 4 to 5 wt.%. This is in contrast to a Comparative Example 1, in which it was used at 2.5 wt.%, which was apparently insufficient. It is respectfully submitted that a polymer used in the amount of 5% cannot be viewed as an additive, as compared to a binder, in the art of paints.

Moreover, not only is the terpolymer of Bergfried a binder, broadly speaking, but it is also a grinding resin, also excluded by the present claims. As pointed out in Applicants' previous amendments, the term "grinding resin" is not a process limitation, but rather a compositional limitation. Therefore, the composition does not require grinding, although a metal pigment paste would normally require grinding. One of ordinary skill in the art would know that grinding pigments can be used for dispersing pigments irrespective of grinding, but it can also be used for a dispersing effect in combination with grinding. This is clearly stated by claim 1, which recites that the grinding resin is "used for dispersing pigments." It is further noted that Bergfried uses milling or its equivalent to divide pigment agglomerates (page 4, lines 13-22).

Thus, it is respectfully submitted that there is no requirement in the art that a "grinding resin" requires "grinding," as is assumed by the Examiner. Applicants disclose, for example, that "grinding resins are used for dispersing pigments", or that "they are



binders whose capacity for dispersing pigments is particularly high". (Application as filed, page 7, line 24, to page 8, line 3). Therefore it is respectfully asserted that a grinding resin is a resin that can be used for stabilizing a pigment dispersion.

This is further affirmed by the prior art relied upon by Applicants in a previous amendment, i.e., United States Patents No. 6,476,170 and 6,630,211 to Roth and Baumgart, respectively. Roth, for examples, discloses that "[i]n use, the [grinding] resins are suspended in water to form a solution and made into a dispersion, known as a latex, by neutralizing them with a base [...]". (Roth, column 1, lines 24-27). Nowhere does Roth require any "grinding". Similar to Roth, Baumgart does not require any "grinding." Applicants respectfully assert that Bergfried's grinding resin is equivalent to that of Roth and Baumgart in terms of its use, i.e., to stabilize a dispersion, among others.

Applicants, therefore, respectfully submit that irrespective of whether the terpolymer of Bergfried is a grinding pigment or a binder, or both, the terpolymer of Bergfried is both essential to Bergfried's metal oxide paste and specifically excluded by the present claims.

In view of the above, Bergfried does not remotely teach or suggest the invention of Applicants' independent claim 1, reciting a metallic paste free from binders and grinding resins. For at least this reason, Bergfried (like Sapper), in fact, teaches away from the claimed invention.

Finally, the Office Action states that, although the combined teaching of Sapper and Bergfried are silent about whether the composition is stable, transportable and storable for up to three months as set forth by Applicants' claims 1 and 16, it would be expected that the composition of the combined teachings of Sapper and Bergfried "have similar properties since the composition's property is determined by the constituents of the composition absent any evidence to the contrary." 12/24/2008 Office Action page 4, last paragraph, to page 5, first paragraph.

Significantly, however, there is no evidence that the metal oxide paste of Bergfried is stable for a period greater than about 10 hours. In fact, small variations (as shown by Comparative Examples 1 and 6) result in the composition becoming unstable in

less than one hour. Yet the difference between Examples 2, 4, and 5 of Bergfried from the unstable Comparative Examples 1, 3, and 6 is less than the difference between Examples 2, 4, and 5 of Bergfried and the composition of the present invention. In further contrast, a metallic paste of the present invention can be storable for up to three months without settling and without the formation of inhomogenities or coagulum (page 6, lines 8-11 and working example on page 20, lines 14-17).

### **Response to Arguments**

The Office Action states that Applicants argue that the pigment used in Bergfried is different from the pigment of the present application. The Examiner responded by stating that Bergfried is used to show that the pigment paste can be made before the paste is mixed with binders. 12/24/2008 Office Action page 5, para. 3. Applicants respectfully submit, as discussed above, that there is no metallic paste in Sapper for Bergfried to modify.

The Office Action states that Applicants argue that Bergfried's terpolymeric compound is a binder. The Examiner responded by stating that the terpolymeric compound is a surfactant. Applicants respectfully submit that there is no evidence that the terpolymer is a surfactant and, in fact, it is contrary to Bergfried's disclosure, as discussed above.

In view of the above, Applicants respectfully assert that the present claims are patentable over the prior art, because the combination of the cited art does not teach or suggest all the elements of the present claims and does not provide any teaching or motivation to modify the prior art to arrive at Applicants' claimed invention. In addition, Sapper and Bergfried, alone or in combination, teach away from Applicants' claimed invention, and as such cannot be used to support obviousness. Withdrawal of this rejection and allowance of the claims is respectfully requested.

**Conclusion**

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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attachment: Wikipedia article on paint.

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